CLAIMS

1. Process for producing a low polarization mode dispersion optical fiber, comprising the steps of drawing an optical fiber from a glass preform; and imparting to the optical fiber, during drawing, a spin about its axis with inversions of the spin direction; characterized in that the number of the inversions in a length of fiber of 20 m is at most two.

2. Process according to claim 1, wherein the spin is imparted according to a bidirectional spin function including zones of substantially constant amplitude and zones of transition where the inversion takes place, wherein the extension of the zones of substantially constant amplitude is greater than the extension of the zones of transition.

3. Process according to claim 1 or 2, wherein the spin is imparted according to a bi-directional and non-periodic spin function.

4. Process according to claim 2, wherein the extension of each of the transition zones is lower than 20% of the extension of the zone of substantially constant amplitude preceding it.

5. Process according to claim 2, wherein the extension of each of the transition zones is lower than 10% of the extension of the zone of substantially constant amplitude preceding it.

6. Process according to claim 1, wherein the number of inversions of the direction of spin in a length of fiber of 25 m is at most two.

7. Process according to claim 2, wherein the peak amplitude of the bi-directional spin function is comprised between 2 turns/m and 10 turns/m.

8. Process according to claim 2, wherein the peak amplitude

of the bi-directional spin function is comprised between 2 turns/m and 5 turns/m.

9. Process according to claim 1, wherein the distance between two consecutive inversions is at most 15 m.

10. Process according to claim 2, wherein the extension of each of the transition zones is lower than 10% of the extension of the zone of substantially constant amplitude preceding it.

11. Process according to claim 2, wherein the bi-directional spin function is trapezoidal.